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Differences in Medical Mistrust Between Black and White Women: Implications for Patient-Provider Communication About PrEP

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Abstract

Pre-exposure prophylaxis (PrEP) is an effective biomedical HIV prevention method. PrEP uptake has been persistently low among US women, particularly Black women, who account for 61% of new HIV diagnoses among women. Further understanding of barriers to Black women accessing PrEP is needed. This 2017 cross-sectional survey study explored race-based differences in PrEP interest and intention among women and the indirect association between race and comfort discussing PrEP with a healthcare provider through medical mistrust. The sample consisted of 501 adult women (241 Black; 260 White) who were HIV-negative, PrEP-inexperienced, and heterosexually active. Black women reported greater PrEP interest and intention than White women. However, Black women expressed higher levels of medical mistrust, which, in turn, was associated with lower comfort discussing PrEP with a provider. Medical mistrust may operate as a unique barrier to PrEP access among Black women who are interested in and could benefit from PrEP.

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Compliance with Ethical Standards

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Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individuals included in the study.

Keywords

Black/African American; Women; Pre-exposure prophylaxis (PrEP); Medical mistrust; HIV/AIDS

INTRODUCTION

Black women are disproportionately affected by HIV, constituting 61% of all US women diagnosed in 2016 [1] despite representing only 13% of women in the US [2]. Improved access to HIV prevention resources is needed to reduce this disparity. Pre-exposure prophylaxis (PrEP) is an effective biomedical HIV prevention method shown to significantly reduce the risk of HIV acquisition [3–5]. PrEP uptake, however, has been slow in general [6] and is especially lagging among women who stand to benefit from its use [7, 8]. For instance, in a national study measuring PrEP uptake among persons in the US, women accounted for only 5% of the estimated number of PrEP users based on fourth quarter 2017 data [9]. In a study projecting PrEP uptake based on retail pharmacy records, PrEP prescription among Black women was significantly lower than among White women [10]. Given the disproportionally high incidence of HIV and low PrEP uptake among Black women, understanding the factors that inhibit or promote Black women's uptake of PrEP and the degree to which these factors account for racial disparities among women can critically inform interventions to enhance PrEP utilization. In the present cross-sectional survey study, we investigated the role of medical mistrust in the relationship between women's race (Black vs. White) and comfort discussing PrEP with a healthcare provider, a key precursor to PrEP uptake.

Background

Medical mistrust refers to a lack of confidence in the medical system and in the intentions and work of medical professionals [11]. Medical mistrust is a self-preserving response borne of a long history of race-based differential treatment, unequal dissemination of effective medical innovations, and other racist injustices within the medical establishment [12, 13]. Prior studies that have explored healthcare experiences among different populations have identified a significant association between race and medical mistrust such that Black Americans are significantly more likely than White Americans to mistrust healthcare personnel and the medical system as a whole [14, 15].

Medical mistrust may operate as a key mediating mechanism in the relationship between race and PrEP uptake. Medical mistrust has been found to negatively influence utilization of healthcare services [16–18]. For example, Eaton et al. [19] found that Black men who have sex with men (MSM) who were higher in medical mistrust were less likely to attend routine medical follow-up appointments. Other studies have reported a similar negative association between medical mistrust and medication adherence among African American men and women living with HIV [20, 21].

Regarding utilization of HIV *prevention* resources, existing research shows an association between medical mistrust and infrequent HIV testing [22–24] and inconsistent condom use [25]. With respect to PrEP use, a study by Brooks et al. found that Black MSM who more

strongly held HIV conspiracy beliefs (a form of medical mistrust involving suspicion of government involvement in the origin and treatment of HIV) had lower intentions to initiate PrEP [26]. Other studies, most of which have been qualitative and primarily focused on MSM, have similarly reported that greater medical mistrust is associated with lower levels of PrEP interest or intention [27–29]. These studies collectively offer early indications that medical mistrust may function as a barrier to PrEP utilization among Black MSM. However, little is known about the potential impact medical mistrust may have on PrEP uptake among Black women.

Given reported gender differences in the level of HIV service utilization [30] – which suggest less optimal HIV service use among women than among men – and observed gender disparities in level of trust in the healthcare system [31, 32], the relevance of medical mistrust to PrEP attitudes and uptake among Black women cannot be inferred based on research with Black men. Rather, the potential impact of medical mistrust among Black women needs to be studied directly within this population. Early qualitative research with Black women has suggested that mistrust in the government as well as the pharmaceutical industry may operate as barriers for PrEP uptake [7, 33], but more research is needed to understand the specific implications that medical mistrust can have for Black women's interactions with the healthcare system in the process of obtaining PrEP. Because PrEP is a prescription-based medication, communicating with a healthcare provider about PrEP is a necessary step to accessing the medication. Given that many providers are not consistently broaching the topic with women [34], requiring women who are seeking PrEP to initiate the conversation, the issue of women's comfort discussing PrEP with a provider is especially salient.

Study Overview

The aim of the current study was to investigate the indirect association between race and women's comfort discussing PrEP with a provider through medical mistrust. We focused our work on women because PrEP uptake has been generally low among women [8, 9], and particularly low for Black women [10] despite their disproportionately large risk for HIV [1]. Understanding why Black woman may be less likely than White women to receive prescriptions for PrEP may help explain, and ultimately address, the stark disparities in HIV infection and PrEP uptake between the two groups [1, 10]. In the present research, we hypothesized that Black women would exhibit greater levels of medical mistrust than White women, and this greater mistrust would, in turn, be associated with less comfort discussing PrEP with a provider. Thus, we tested the indirect path from women's race to comfort discussing PrEP through medical mistrust.

We also considered, in an exploratory post-hoc analysis, two factors recognized to be necessary precursors to individuals seeking a prescription for PrEP from a provider within existing theoretical models of PrEP uptake, including PrEP cascade models [35, 36] and the Information-Motivation-Behavioral Skills (IMB) model [37]. These factors included interest in learning about PrEP and intention to use PrEP, and we explored whether there were racial differences in women's interest and intention and how these factors may relate to Black and White women's comfort discussing PrEP with a provider. Previous research has found that,

perhaps due to greater HIV burden among this population, Black women express strong interest in learning about PrEP [7] and sometimes report greater intention than White women to use PrEP [38, 39].

METHODS

Procedure

Data for the present study were obtained via a 2017 cross-sectional online survey of 973 clients from Planned Parenthood reproductive health centers in the three cities with the highest rates of HIV infection in Connecticut: Bridgeport (HIV prevalence of 924 per 100,000), New Haven (1,118 per 100,000), and Hartford (1,494 per 100,000) [40]. In 2017, approximately 26 health centers in Connecticut and 13 in Bridgeport, New Haven, and Hartford specifically were listed as PrEP providers with the Connecticut Department of Public Health [41]. State-sponsored public health campaigns promoting PrEP awareness, including advertisements featuring heterosexual women, had previously targeted these three cities. The survey was administered about eight months after PrEP had been available at the three Planned Parenthood centers from which present data were collected.

Clientele who attended a Planned Parenthood appointment in the past 10 months, were over the age of 18, and had been enrolled in the online patient portal system were emailed a link directing them to an online survey that took approximately 35 minutes to complete. In the survey, which was administered in English, participants were given background information regarding daily oral PrEP (emtricitabine/tenofovir disoproxil fumarate - Truvada®) including: purpose of the medication, administration method (daily oral dosing), potential side effects, efficacy, and approval by the US Food and Drug Administration (FDA). We refer readers to Appendix 1, which contains the background information provided regarding PrEP and PrEP-related measures. Following survey completion, participants were compensated with a $10 gift card and provided with additional information regarding PrEP and other HIV prevention and health promotion resources. All study procedures were approved by the Yale University Institutional Review Board.

MEASURES

Medical mistrust.

In this study, medical mistrust was measured using the Group-Based Medical Mistrust Scale (GBMMS), which assesses previous experiences of racial discrimination as well as feelings of discomfort and suspicion that one has toward healthcare personnel and pharmacological treatment [42]. The GBMMS is a 12-item questionnaire that uses a 5-point Likert-type scale for the response key, ranging from (1) Strongly disagree to (5) Strongly agree. In the original study that assessed the psychometric properties of the GBMMS among 186 African American and Latina urban women, Thomas et al. [42] reported a Cronbach's alpha of 0.83. In the current study, $\alpha = 0.88$ for the full sample ($\alpha = 0.87$ among Black women, $\alpha = 0.86$ among White women).

Similar to others studies [43, 44], wording from this scale was adapted to fit the characteristic of interest for our sample population. Specifically, the scale was modified to

state “people of my race” rather than “people of my ethnic group” due to our focus on race-based medical mistrust and the potential heterogeneity in ethnic group identification within our Black and White comparison groups. In the present study, Latina/Hispanic women were grouped according to the racial group with which they identified (e.g. Black/African American, White).

Interest in learning more about PrEP.

Interest in learning more about PrEP was assessed using a single-item measure, which asked participants to rate their level of interest in learning more about PrEP on a 5-point scale ranging from (1) Not at all interested to (5) Extremely interested.

Intention to use PrEP.

Intention to use PrEP was assessed using a single-item measure, which asked participants to rate their likelihood of taking PrEP if it were available for free on a 5-point scale ranging from (1) Definitely would not take PrEP to (5) Definitely would take PrEP. This measure was previously used in a study exploring factors predicting PrEP intention among MSM [45].

Comfort discussing PrEP with a provider.

Comfort discussing PrEP with a healthcare provider was measured using a single-item measure, which asked participants to rate their level of comfort talking with a healthcare provider about PrEP. Participants were asked to rate this item on a 5-point scale ranging from (1) Not at all comfortable to (5) Extremely comfortable.

Gender.

Participant’s gender was collected using a single multiple-choice item, which asked participants to select the gender that best describes them: (1) Woman, (2) Man, (3) Transgender woman, (4) Transgender man, (5) Gender queer, (6) Other, or (7) I prefer not to say.

Race.

Race was measured in the present study as the subjective identification of one’s racial identity [46]. Participants’ self-identified race was collected using a single multiple-choice item, which asked participants to select the race that best describes them: (1) American Indian or Alaska Native, (2) Asian, (3) Black or African American, (4) Native Hawaiian/ Other Pacific Islander, (5) White, or (6) Other race. This item was asked separately from the item assessing ethnicity (Latina/Hispanic vs. non-Latina/Hispanic).

Other background characteristics.

In addition to gender and race, participants also reported their age (years); ethnicity (Latina/ Hispanic or non-Latina/Hispanic); sexual orientation (Heterosexual, Bisexual, Gay/Lesbian, Queer, Asexual, or Other); marital status (Married, Widowed, Divorced, Separated, or Never married); education level (No diploma, High school diploma or the equivalent, Some college but no degree, Bachelor’s degree, Master’s degree, or Professional or doctoral degree);

annual income (amount); employment status (Employed full/part-time, Unemployed, or Other); insurance status (Insured, Uninsured, or Unknown); type of insurance if applicable (Private, Medicaid, Online Marketplace/Obamacare, and/or Other), prior PrEP knowledge (Ever having heard of PrEP or Never/Unknown); condom use consistency (Always, Mostly, Sometimes, Rarely, or Never); number of male sex partners (past 6 months); HIV testing (lifetime and past 12 months); and perceived HIV risk (Not at all, A Little Bit, Somewhat, Very, or Extremely likely to get HIV in lifetime).

Analysis—All analyses were conducted using IBM SPSS Statistics Version 24. For the purpose of this study, analyses were restricted only to respondents who self-reported being a woman, Black or White, HIV-negative, PrEP-inexperienced, and heterosexually active (i.e., anal or vaginal sex with a man) in the past six months. Frequencies and means were calculated to describe the sample and measures of interest. Pearson's product-moment correlations were run to assess bivariate relationships between main measures separately for Black and White women and within the combined sample. Chi-square tests of independence and independent samples *t*-tests were employed to identify group-level differences in background characteristics, medical mistrust, and PrEP-related outcomes between Black women and White women.

To analyze the indirect relationship between race and comfort discussing PrEP with a provider via medical mistrust, Hayes' PROCESS macro for SPSS, which employs bootstrapping, was used [47]. Bootstrapping is an analytic technique that utilizes random resampling to analyze direct and indirect relationships in structural models [48]. Compared to other analytic tests of indirect effects, it has the highest power and offers the greatest reduction in the Type I error that is associated with conducting multiple statistical tests. Moreover, this technique does not require a significant bivariate X-Y relationship to establish mediation [49, 50]. We used bias-corrected confidence intervals and generated 10,000 bootstrapped samples (resampling from the original sample data) to test our hypothesized indirect effect. The model was adjusted for background characteristics, including those that were empirically significant ($p < .05$) and/or theoretically relevant. These characteristics were age, ethnicity, insurance status, marital status, prior PrEP knowledge, annual income, employment status, level of education, and perceived HIV risk.

RESULTS

Sample Characteristics

The survey link was emailed to 11,238 Planned Parenthood patients; a total of 973 participants took the online survey before it was closed to new enrollment. The survey was closed after 973 had enrolled (achieved within the first 100 hours of survey distribution) to avoid exceeding the enrollment maximum of $n = 1{,}000$. Of the 973 participants enrolled, 501 met criteria for the present study in accordance with aforementioned inclusion criteria. The subsample consisted of 260 (52%) White and 241 (48%) Black/African American women. Women ranged in age from 18 to 65 years ($M = 28.63$; $SD = 7.45$). Ninety-three percent had some form of health insurance: In response to a question asking insured respondents to select all forms of insurance that applied, 44% indicated that they had Medicaid; 42% had

private insurance through their school, employer, partner, or family; 15% had insurance through the online marketplace/Patient Protection and Affordable Care Act (i.e. Obamacare); and less than 1% had another form of insurance. Before initiating the survey, 24% had heard of PrEP. Sixty-five percent reported some level of interest in learning more about PrEP ("A little bit" to "Extremely" interested), 58% would consider initiating PrEP if it were available for free ("Might" to "Definitely" would take PrEP), and 42% reported some level of discomfort in speaking with healthcare providers about PrEP ("Not at all" to "Somewhat" comfortable).

Between-Group Race Comparisons

Table I presents sample characteristics for Black women, White women, and the combined sample as well as results of between-group comparisons. We found no statistically significant racial differences in age, sexual orientation, and health insurance status. Group-level differences were, however, observed in ethnicity, marital status, employment status, annual income, and level of education; Black women reported a higher rate of employment, lower annual income, and lower education level. They were less likely to be married compared to White women. There was no significant difference in perceived HIV risk, number of male sexual partners in the past six months, or condom use consistency between the two racial groups. Black women were more likely to have been tested for HIV in the past year and in their lifetime but less likely to have prior PrEP knowledge compared to White women.

As indicated in Table II, compared to White women, Black women reported significantly higher medical mistrust. Black women reported greater interest in learning more about PrEP and greater intention to use PrEP if it were available for free. No significant racial difference was observed in comfort discussing PrEP with a healthcare provider.

Correlation Analyses

Table III presents correlation coefficients for bivariate relationships among race, medical mistrust, interest in learning more about PrEP, intention to use PrEP, and comfort discussing PrEP with a provider for the full sample (Table IIIa) and for Black and White women separately (Table IIIb). For both stratified and combined samples, medical mistrust was not associated with PrEP interest or PrEP intention but was negatively correlated with comfort discussing PrEP with a healthcare provider. Interest in learning more about PrEP, intention to use PrEP, and comfort discussing PrEP with a provider were all positively correlated.

Bootstrapping Analysis of Indirect Effects

We found a significant indirect relationship between race and comfort discussing PrEP with a healthcare provider (Figure I; unadjusted model: −0.137, SE = .037, 95% CI [−0.233, −0.061]; adjusted model: −0.163, SE = .051, 95% CI [−0.273, −0.072]. Consistent with our hypothesis, Black women had a greater level of medical mistrust, which, in turn, was associated with lower comfort discussing PrEP with a provider.

We also conducted an exploratory analysis of a multiple-mediator model that added interest in learning more about PrEP and intention to use PrEP as parallel mediators to our original

single-mediator model. Thus, the model included three parallel mediational pathways between race and comfort discussing PrEP with a provider through interest in learning more about PrEP, intention to use PrEP, and medical mistrust. The negative indirect association through medical mistrust remained significant (unadjusted model: −0.133, SE = 0.042, 95% CI [−0.224, −0.060]; adjusted model: −0.139, SE = 0.044, 95% CI [−0.236, −0.063]). There was also a positive indirect association through interest in learning more about PrEP (unadjusted model: 0.100, SE = 0.033, 95% CI [.046, 0.178]; adjusted model: 0.081, SE = 0.033, 95% CI [0.025, 0.158]). Black women had greater interest in learning more about PrEP, which, in turn, was associated with greater comfort discussing PrEP with a healthcare provider. The indirect path for intention to use PrEP was not significant.

DISCUSSION

In the current study, we examined the implications of race and medical mistrust for comfort discussing PrEP with a provider and explored racial differences in PrEP interest and intended uptake among Black and White women. We found that Black women had significantly more medical mistrust than White women, which, in turn, was associated with lower comfort discussing PrEP with a healthcare provider. Nonetheless, Black women expressed higher interest in learning about PrEP and greater intention to use PrEP, and our exploratory post-hoc analysis suggested that the former could help to offset the detrimental impact of medical mistrust on patient-provider communication among this group. Thus, our finding that Black and White women did not differ overall in their expressed comfort discussing PrEP with a provider occurred, in part, because of underlying racial differences among women that were related to expressed comfort but in opposite directions.

In our sample, only 24% of women had prior knowledge of PrEP and there was a clear racial disparity in awareness, with Black women significantly less likely than White women to have prior PrEP knowledge. However, after being provided information about PrEP, Black women had significantly more interest in learning about PrEP and greater likelihood of initiating the medication if it were available for free. These findings are consistent with other studies, which found greater PrEP acceptability among Black women compared to other racial groups [7, 38, 39]. Despite high interest, however, existing research shows that PrEP uptake among Black women has been disproportionately low [10], suggesting that PrEP awareness and interest, although important, are insufficient for PrEP initiation. Kelly et al.'s [35] multi-step theoretical model of the PrEP care continuum identifies potential facilitators and barriers to PrEP use at multiple points between medication awareness and medication adherence. The model suggests that although awareness is a necessary step toward uptake, additional steps involving interaction with the healthcare system are also needed. These steps require the patient to be willing to see a medical provider and to discuss risk behavior in the process of establishing their PrEP eligibility. The indirect association identified in the present study suggests that these requirements could function as barriers to PrEP access that are particularly salient for Black women, contributing to the observed disparities in uptake of this potentially life-changing preventive medication.

Implications for Intervention

It is valuable to understand the dynamics underlying racial differences in PrEP uptake in order to develop effective interventions that facilitate access to PrEP among Black women. Previous work has demonstrated, consistent with the proposed dynamic in the IMB model of health behavior change in general [51] and as applied to PrEP uptake in particular [37, 52], that acquisition of appropriate behavioral skills is a key mechanism through which knowledge of a health issue and motivation to address the issue leads to adoption of a preventive behavior. Increasing Black women's comfort discussing PrEP with providers may be a critical issue to consider when developing interventions aimed at increasing PrEP uptake among this key population.

Our findings suggest multiple points of intervention that could help to improve comfort communicating with a provider about PrEP, including addressing medical mistrust and stimulating interest in learning more about PrEP. Given the negative impact of medical mistrust on comfort discussing PrEP with healthcare providers and general utilization of healthcare services [16–18], collective efforts are needed at an individual and structural level to build greater trust in the healthcare system among racial minority women. For instance, in healthcare settings, educating providers on the principles of shared decision-making and providing communication skills training that helps to cultivate a trusting patient-provider relationship may serve as one potentially fruitful avenue for increasing utilization of PrEP among women who stand to benefit from the protection it affords. Furthermore, medical mistrust may be reduced through greater cultural competency training among providers and having more racially diverse healthcare providers who reflect the communities they serve [12, 53]. Reductions in medical mistrust would encourage patient-provider dialogue around PrEP, sexual behavior, and other potentially sensitive health topics.

This study further supports the recommendation for PrEP to be included in routine discussions with patients about preventative health [54]. Routinization of PrEP education can help to raise generalized awareness about PrEP and increase its acceptability in society; consequently, women with high levels of medical mistrust who avoid utilization of most healthcare services may be more likely to hear about PrEP and willing to consider it as a prevention option for themselves [54]. Public awareness campaigns can also help to this end by spreading awareness and normalizing PrEP use. Promoting interest in learning about PrEP by making more aggressive efforts to increase PrEP awareness among Black women may offset any deterring effect of medical mistrust and motivate Black women to broach the topic of PrEP with a healthcare provider as was reflected in our post-hoc analyses.

While acknowledging the findings of the present study, it is also important to keep in mind the multifaceted nature of health inequalities and the interplay of multiple factors that function at various ecological levels and contribute to higher HIV rates and disproportionately lower PrEP uptake among Black women [55]. Individual-level factors may include socioeconomic conditions, insurance status, health literacy, and attitudes regarding preventative healthcare [12]. HIV and PrEP stigma, sexual networking, and norms around negotiating power in sexual relationships can contribute to disparities at the interpersonal level [56–58]. Within the healthcare system, provider explicit and/or implicit (conscious and unconscious) biases, stereotyping, and prejudice can function as contributing

factors [12, 59, 60]. At the structural level, residential segregation, poverty, availability of healthcare resources, and fragmentation of care are important factors that may contribute to disproportionately higher HIV incidence among Black women and likely contribute to PrEP disparities [12, 61]. Aforementioned variables, in addition to medical mistrust, must be considered to fully understand and effectively address socio-structural barriers that contribute to general inequitable health and specifically to disparity in PrEP access among Black women.

Limitations and Future Research

This study was subject to limitations, which one should be mindful of when interpreting results. The main purpose of the present study was to assess the impact that race-based medical mistrust can have on comfort discussing PrEP with a provider among Black and White women; thus, our analysis focused on race and adjusted for ethnicity. Further investigation is warranted to determine whether the observed associations generalize to ethnic minorities and other social groups experiencing medical mistrust. Future research might also consider more directly how factors that could potentially relate both with medical mistrust and with discomfort discussing treatment with providers, such as socioeconomic status (SES) [62] and health literacy [63], interact with race to influence comfort discussing PrEP with providers.

It is important to note that our study sample was recruited using a Planned Parenthood listserv and, thus, included only women who were already engaged in care and therefore likely to have lower medical mistrust than the general population. Additionally, it is possible that among the Planned Parenthood patients invited to participate in the survey, those with greater levels of medical mistrust were less likely to do so, yielding a study sample that may be particularly low in medical mistrust relative to US women more broadly. Furthermore, it is important to keep in mind that the observed racial difference in medical mistrust, although statistically significant, was relatively small (Table II). This finding may suggest that medical mistrust, although more salient, is not isolated to the Black/African American community. It is also possible that racial disparities in mistrust are more dramatic among individuals not engaged in care.

There are also limitations inherent in the study measures and design used to assess PrEP knowledge and attitudes. In the absence of pre-validated scales, several key constructs (e.g., PrEP interest and comfort discussing PrEP with a provider) were measured with single items constructed for the purpose of the present survey. We did not assess the extent or accuracy of participants' prior PrEP knowledge; rather, participants were asked if they had ever "heard of" PrEP. Similarly, the measure used to assess participants' comfort discussing PrEP with a provider was a single item that did not consider contextual details (e.g., type of provider, type of healthcare setting); thus, responses likely varied depending on participants' supposition of such contextual information. Use of multi-item scales and qualitative methods in future research could offer a more nuanced understanding of the results presented here.

It is also worth noting that prior to responding to items assessing PrEP interest, intention, and comfort discussing PrEP with a provider, participants were presented with background information regarding PrEP (see Appendix 1). It is possible that the background information

influenced participants' subsequent responses. However, all participants received the same information; thus, we have no reason to believe that it would have differentially influenced the two racial groups.

Participant responses on the measure assessing intention to use PrEP [45] may not reflect subsequent medication uptake. Longitudinal methods should be employed in future research to examine the predictive value this measure offers and to directly examine medical mistrust as a predictor of PrEP uptake. Moreover, the present study is cross-sectional and therefore we cannot assume directionality, which precludes inferences about causation.

We also note that although we did observe a significant indirect effect between women's race and comfort discussing PrEP through medical mistrust, the direct effect between race and comfort discussing PrEP was not significant. Although one reason may be that tests of indirect effects have more statistical power, and thus are more sensitive than are direct effects [64], our exploratory analyses suggest that another plausible explanation is the presence of another variable – interest in learning more about PrEP – is limiting the direct effect (i.e. a "suppressor variable"). Our findings suggest the importance of considering, in a more complex and comprehensive way, the multiple factors that can simultaneously affect women's responses to PrEP as a function of race.

CONCLUSIONS

PrEP is a prescription medication, which means that one has to discuss PrEP with a medical professional in order to gain access. In this study of care-engaged women, knowledge of PrEP was low, particularly among Black women. However, once participants were educated about PrEP, the majority expressed some openness to learning more and potentially using PrEP, and interest and intention were relatively high among Black women. Medical mistrust, which was more prevalent among Black women, was associated with lower comfort discussing PrEP with a provider, suggesting medical mistrust could limit access to this medication among one of the groups who stand to benefit the most. We believe optimal and equitable dissemination of PrEP hinges upon improved efforts to increase PrEP awareness and build trust in the healthcare system among Black women and other priority populations.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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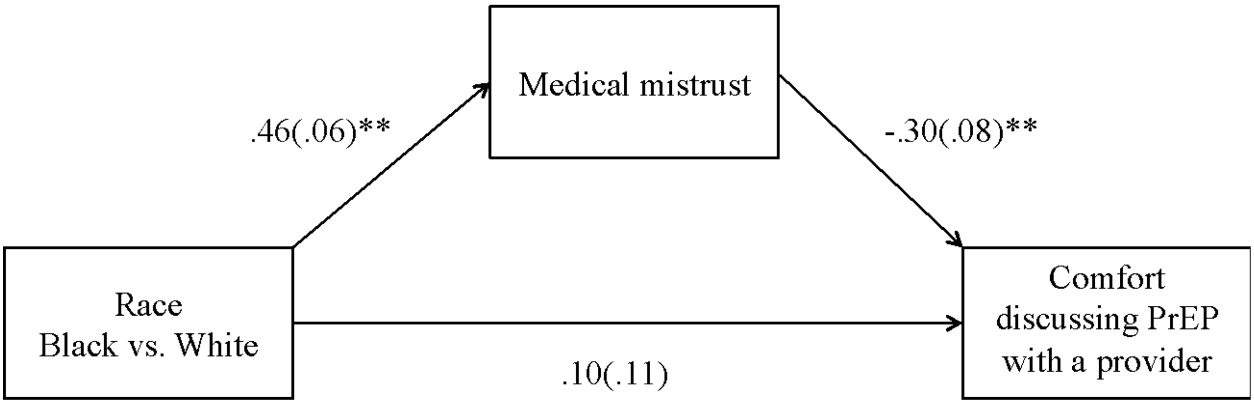
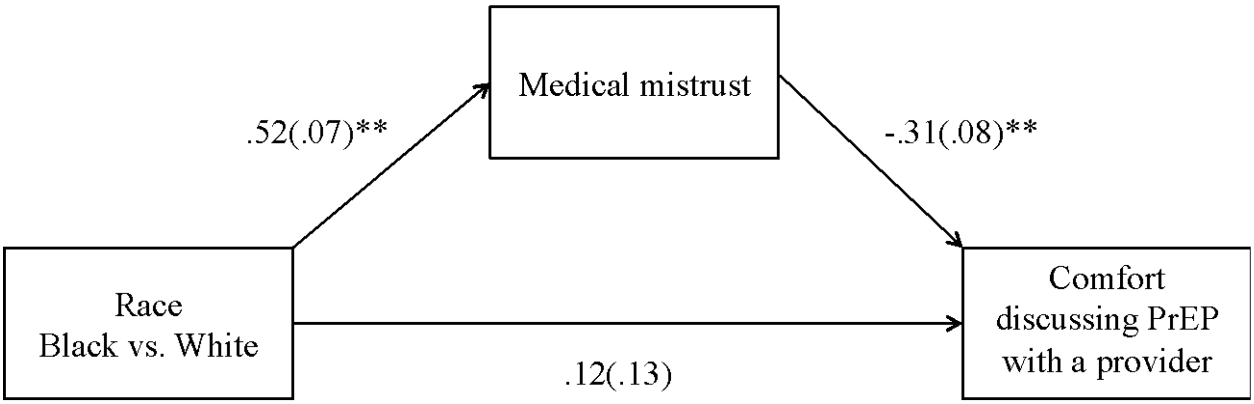
a. Unadjusted model



*$p < .05$ **$p < .01$

b. Adjusted model



*$p < .05$ **$p < .01$

Figure 1.

Models of the indirect effect of race on comfort discussing PrEP with a provider through medical mistrust; a unadjusted and b adjusted for age, ethnicity, insurance status, marital status, prior PrEP knowledge, annual income, employment status, level of education, and perceived lifetime risk of HIV. In both unadjusted and adjusted models, there was a significant indirect relationship between race and comfort discussing PrEP with a healthcare provider; unadjusted model: − 0.137, SE = 0.037, 95% CI [− 0.233, − 0.061]; adjusted model: − 0.163, SE = 0.051, 95% CI [− 0.273, − 0.072]

Table I.

Sample background characteristics by racial group

Characteristic	White (*n* = 260) *n* (%) or M [SD]	Black (*n* = 241) *n* (%) or M [SD]	Total (*n* = 501) *n* (%) or M [SD]
Ethnicity			
Hispanic **	58 (22.3)	17 (7.1)	75 (15.0)
Age- M [SD]	29.14 [7.0]	28.08 [7.9]	28.63 [7.5]
18–25	85 (32.7)	109 (45.2)	194 (38.7)
26–35	140 (53.8)	95 (39.4)	235 (46.9)
36–45	28 (10.8)	29 (12.0)	57 (11.4)
>45	7 (2.7)	8 (3.3)	15 (3.0)
Married **	45 (17.3)	23 (9.5)	68 (13.6)
Annual Income **			
<10,000	55 (21.2)	67 (27.8)	122 (24.4)
11,000–30,000	73 (28.1)	91 (37.8)	164 (32.7)
31,000–50,000	58 (22.3)	59 (24.5)	117 (23.4)
51,000–70,000	33 (12.7)	20 (8.3)	53 (10.6)
>70,000	41 (15.8)	4 (1.7)	45 (9.0)
Insured (private, Medicaid, online marketplace, or other)	239 (91.9)	226 (93.8)	465 (92.8)
Employment **			
Employed	164 (63.1)	180 (74.7)	344 (68.7)
Unemployed	34 (13.1)	26 (10.8)	60 (12.0)
Other	62 (23.8)	35 (14.5)	97 (19.4)
Education Level **			
Less than bachelor's	156 (60.0)	206 (85.5)	362 (72.3)
Bachelor's or higher	104 (40.0)	35 (14.5)	139 (27.7)
Sexual Orientation			
Heterosexual	200 (76.9)	191 (79.3)	391 (78.0)
Bisexual	37 (14.2)	34 (14.1)	71 (14.2)
Gay/Lesbian	3 (1.2)	2 (0.8)	5 (1.0)
Other	20 (7.7)	14 (5.8)	34 (6.8)
HIV tested in lifetime **	200 (76.9)	215 (89.2)	415 (82.8)
Recent HIV test **			
Within 12 mos.[a]	131 (65.5)	175 (81.4)	306 (73.3)
Number of sex partners[b]			
One	194 (75.8)	161 (67.4)	355 (71.1)
Two	29 (11.3)	39 (16.3)	68 (12.7)
Three or more	33 (12.9)	39 (16.3)	72 (14.5)
Perceived HIV risk	57 (21.9)	49 (20.3)	106 (21.2)

Characteristic	White (*n* = 260) *n* (%) or M [SD]	Black (*n* = 241) *n* (%) or M [SD]	Total (*n* = 501) *n* (%) or M [SD]
Prior PrEP knowledge *	73 (28.1)	48 (19.9)	121 (24.2)
Condom use [c]			
Always	20 (7.8)	27 (11.3)	47 (9.5)
Sometimes [d]	108 (42.2)	116 (48.7)	224 (45.3)
Never	128 (50.0)	95 (39.9)	223 (45.1)

Note. Asterisks denote significant differences between Black and White women in our sample.

* $p < .05$

** $p < .01$

[a] For this variable White $n = 200$, Black $n = 215$

[b] This variable assessed number of male sexual partners in the past six months; White n=256 Black $n = 239$

[c] White $n = 256$ Black $n = 238$

[d] Represents combination of “Rarely,” “Sometimes,” and “Never” responses

Table II.

Mean differences of main measures in separate racial groups and combined sample

	White		Black		Total	
Variables	***n***	**M [SD]**	***n***	**M [SD]**	***n***	**M [SD]**
Medical mistrust **	252	2.04 [0.65]	218	2.50 [0.69]	470	2.25 [0.71]
Interest in learning more about PrEP **	260	2.05 [1.11]	240	2.45 [1.24]	500	2.24 [1.19]
Intention to use PrEP *	260	2.72 [1.31]	241	2.96 [1.38]	501	2.83 [1.35]
Comfort discussing PrEP with a provider	260	3.57 [1.18]	241	3.51 [1.21]	501	3.54 [1.19]

* $p < .05$

** $p < .01$

Table IIIa.

Bivariate correlations among main measures for full sample

Variables	Race	Medical mistrust	PrEP interest	PrEP intention	Comfort discussing PrEP with a provider
Race	-	.321**	.170**	.089*	−.023
Medical mistrust		-	.046	−.004	−.166**
PrEP interest			-	.487**	.262**
PrEP intention				-	.165**
Comfort discussing PrEP with a provider					-

* $p < .05$

** $p < .01$

Table IIIb.

Bivariate correlations among main measures stratified by patient race

Variables	Medical mistrust	PrEP interest	PrEP intention	Comfort discussing PrEP with a provider
Medical mistrust	-	−.020	−.058	−.158 *
PrEP interest	.001	-	.518 **	.281 **
PrEP intention	.010	.439 **	-	.197 **
Comfort discussing PrEP with a provider	.181 **	.257 **	.139 *	-

Note. Intercorrelations for Black women are presented above the diagonal separation and those for White women are presented below.

* $p < .05$

** $p < .01$